WHAT IS CLAIMED IS:

1. A method of producing a crystal growth substrate, comprising:

molding a seed substrate into a desired shape so that irregularities are provided to a sapphire growth surface of said seed substrate;

growing a sapphire crystal on said sapphire growth surface of said seed substrate to thereby form a sapphire substrate; and

removing said seed substrate selectively from said sapphire substrate formed by the sapphire substrate growth step.

2. A method of producing a crystal growth substrate according to claim 1, wherein silicon (Si) or gallium arsenide (GaAs) is used as a material of said seed substrate.

3. A method of producing a crystal growth substrate according to claim 1, wherein chemical etching is performed in the seed substrate removal step.

4. A method of producing a crystal growth substrate according to claim 1, further comprising a step of heating said sapphire substrate formed by the sapphire substrate growth step at a high temperature of not lower than about 1000°C to thereby perform phase transition of said sapphire substrate from γ phase

to α phase.

5. A method of producing a crystal growth substrate according to claim 1, wherein the shape of said irregularities provided to said sapphire growth surface of said seed substrate is formed by use of cavities each having part of an almost spherical shape in the seed substrate molding step.

6. A method of producing a crystal growth substrate according to claim 1, wherein cavities are formed periodically so as to be arranged two-dimensionally in said sapphire growth surface of said seed substrate in the seed substrate molding step.

7. A method of producing a semiconductor light-emitting element, said semiconductor light-emitting element capable of emitting planar light and including a semiconductor laminated on a sapphire substrate by crystal growth, said method comprising:

molding a seed substrate into a desired shape so that irregularities are provided to a sapphire growth surface of said seed substrate;

growing a sapphire crystal on said sapphire growth surface of said seed substrate to thereby form a sapphire substrate;

growing a desired semiconductor layer as a crystal on

said sapphire substrate; and

removing said seed substrate selectively from said sapphire substrate formed by the sapphire substrate growth step.

8. A method of producing a semiconductor light-emitting element according to claim 7, further comprising a step of forming an electrode, the step being provided between the semiconductor crystal growth step and the seed substrate removal step.

9. A method of producing a semiconductor light-emitting element according to claim 7, wherein said semiconductor layer is made of a Group III nitride compound semiconductor containing "$Al_xGa_yIn_{1-x-y}N$ ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x+y \leq 1$)" as a main component, which may contain impurities as an additive or may be free from impurities.

10. A semiconductor light-emitting element capable of emitting planar light and including a semiconductor laminated on a sapphire substrate by crystal growth, wherein:

said semiconductor light-emitting element is produced by a method of producing a semiconductor light-emitting element according to claim 7; and

a rear surface of said sapphire substrate is formed into a shape reverse to the shape of said irregularities provided

to said sapphire growth surface of said seed substrate used as a mold.

11. A sapphire substrate capable of being used as a semiconductor crystal growth substrate, wherein:

said sapphire substrate is produced by a method of producing a crystal growth substrate according to claim 1; and

a rear surface of said sapphire substrate is formed into a shape reverse to the shape of said irregularities provided to said sapphire growth surface of said seed substrate used as a mold.

12. A method of producing a crystal growth substrate according to claim 1, wherein said seed substrate is capable of being etched more easily than sapphire (Al_2O_3).

13. A method of producing a semiconductor light-emitting element according to claim 7, wherein said seed substrate is capable of being etched more easily than sapphire (Al_2O_3).